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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/892,161	06/26/2001	Michael R. Ohran	14113.3.2.2	4716

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EXAMINER

COLBERT, ELLA

ART UNIT PAPER NUMBER

3693

DATE MAILED: 09/12/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/892,161	OHRAN, MICHAEL R.	
	Examiner	Art Unit	
	Ella Colbert	3693	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 19 June 2006.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-7 and 9-39 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-7 and 9-39 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 19 June 2006 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date <u>2/17/06</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

1. Claims 1-7 and 9-39 are pending. Claims 1, 9, 16, 20, and 28 have been amended in this communication filed 6/19/06 entered as Response After Non-Final Action and New or Additional Drawings.
2. The request for Extension of Time filed 06/09/06 has been entered.
3. The Drawing filed 6/19/06 has been reviewed and accepted. The IDS filed 2/17/06 has been considered.
4. The claim objection to claim 20 has been overcome by Applicants' amendment and is hereby withdrawn.
5. The 35 USC 112 second paragraph rejection for claim 10 has been considered in view of Applicants' arguments and the 35 USC 112 second paragraph rejection is hereby withdrawn.
6. Applicants' arguments are considered moot in view of the new ground(s) of rejection as set forth here below.

Claim Rejections - 35 USC § 103

7. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

8. Claims 1-7 and 9-22 and 28-39 are rejected under 35 U.S.C. 103(a) as being unpatentable over (US 5,432,922) Polyzois et al, hereafter Polyzois in view of (WO

95/00906) Rollins et al, hereafter Rollins and further in view of (US 6,047,356) Anderson et al, hereafter Anderson.

As per claims 1, 28, 29, and 38, Polyzois teaches, A method of mirroring data stored on a first server having a first mass storage device to a second server having a second mass storage device so as to establish a virtual storage area network, the method comprising: receiving a write request at the first server from a network device, the first server connected to a first mass storage device (col. 4, lines 31-44); determining that the first server has write access to both the first mass storage device and to a second mass storage device connected by a second server by performing a policing protocol in response to the write request (col. 4, line 58-col. 5, line 9); using an I/O driver of the first server, executing the write request at the first server to write data to the first mass storage device (col. 7, lines 1-25). Polyzois failed to teach, using a mirror engine of the first server, transmitting a copy of the write request the second server; and executing the copy of the write request at the second server to write the data to the second mass storage device, without processing the write request using an I/O driver of the second server, thereby mirroring the data at the second mass storage device, wherein the data is stored in a virtual shared storage node associated with the first server and the second server. Rollins teaches, using a mirror engine of the first server, transmitting a copy of the write request to the second server (col. 15, lines 4-17 and page 23, line 13 –page 24, line 12). Polyzois and Rollins failed to teach, executing the copy of the write request at the second server to write the data to the second mass storage device, without processing the write request using an I/O driver of the second

server, thereby mirroring the data at the second mass storage device, wherein the data is stored in a virtual shared storage node associated with the first server and the second server. Anderson teaches, executing the copy of the write request at the second server to write the data to the second mass storage device, without processing the write request using an I/O driver of the second server, thereby mirroring the data at the second mass storage device, wherein the data is stored in a virtual shared storage node associated with the first server and the second server (col. 7, line 26-col. 8, line 23 and line 65- col. 10, line 33 and line 61-col. 11, line 7 and line 54- col. 12, line 11). It would have been obvious to one having ordinary skill in the art at the time the invention was made to use a mirror engine of the first server, transmit a copy of the write request at the second server, execute the copy of the write request at the second server to write the data to the second mass storage device, without processing the write request using an I/O driver of the second server, thereby mirroring the data at the second mass storage device, wherein the data is stored in a virtual shared storage node associated with the first server and the second server and to combine Polyzois receiving a write request at the first server from a network device; determining that the first server has write access to the first mass storage device and to the second mass storage device; and executing the write request at the first server so as to write data to the first mass storage device with Rollins' using a mirror engine of the first server, transmitting a copy of the write request to the second server; and Anderson's executing the copy of the write request at the second server to write the data to the second mass storage device, without processing the write request using an I/O driver of the second server, thereby

mirroring the data at the second mass storage device, wherein the data is stored in a virtual shared storage node associated with the first server and the second server because such a combination would allow Polyzois system to have the ability to backup data and to restore the data without losing any of the data because of a network disaster.

As per claims 2, 21, 30, and 36, Polyzios failed to teach, wherein transmitting a copy of the write request comprises transmitting the copy of the write request using a dedicated link between the first server and the second server. Rollins teaches, wherein transmitting a copy of the write request comprises transmitting the copy of the write request using a dedicated link between the first server and the second server (page 15, lines 4-17 and page 23, line 13 – page 24, line 12).

As per claims 3, 13, 18, 22, 31, and 37, Polyzois failed to teach, wherein transmitting a copy of the write request comprises transmitting the copy of the write request using infrastructure of the network, wherein the infrastructure is used by the network to transmit data between workstations and servers. Rollins teaches, wherein transmitting a copy of the write request comprises transmitting the copy of the write request using infrastructure of the network, wherein the infrastructure is used by the network to transmit data between workstations and servers (page 13, line 16 –page 14, line 14 and page 17, line 3- page 18, line 12).

As per claims 4 and 14, Polyzois failed to teach, further comprising:
experiencing a failure such that the data is not accessible from the first mass storage device; and executing a read request for data that has been written to the first mass

storage device by accessing the data that has been mirrored at the second mass storage device. Rollins teaches, further comprising: experiencing a failure such that the data is not accessible from the first mass storage device; and executing a read request for data that has been written to the first mass storage device by accessing the data that has been mirrored at the second mass storage device (page 10, lines 1-21).

As per claims 5 and 34, Polyzios failed to teach, wherein the failure comprises the first server going offline. Rollins teaches, wherein the failure comprises the first server going offline (page 21, line 18 –page 23, line 12).

As per claim 6 and 35, Polyzios failed to teach, wherein the failure comprises a failure of the first mass storage device. Rollins teaches, wherein the failure comprises a failure of the first mass storage device (page 22, lines 8-18).

As per claims 7, 17, and 39, Polyzios teaches, further comprising using a policing protocol, prior to executing the write request at the, first server, to determine whether the first server has write access (col. 4, line 58-col. 5, line 9).

As per claims 9 and 15, Polyzios failed to teach, A method of mirroring data stored on a first server having a the first mass storage device to the second mass storage device of a second server so that the data is accessible to the first server and the second server through a virtual storage area network, the method comprising: establishing a virtual storage area network between the first server and the second server that includes a virtual shared storage node, wherein the virtual shared storage node physically includes the first mass storage device; the second mass storage device; means for mirroring data between the first mass storage device and the second mass

storage device; and means for communicating between the first server and the second server. Rollins teaches, A method of mirroring data stored on a first server having a the first mass storage device to the second mass storage device of a second server so that the data is accessible to the first server and the second server through a virtual storage area network, the method comprising: establishing a virtual storage area network between the first server and the second server that includes a virtual shared storage node, wherein the virtual shared storage node physically includes the first mass storage device (page 17, line 3- page 18, line 12); the second mass storage device (page 18, line 13- page 19, line 5); means for mirroring data between the first mass storage device and the second mass storage device (page 20, lines 4-15); and means for communicating between the first server and the second server (page 17, lines 3-18). This independent claim is rejected for the similar rationale as given above for claim 1.

As per claims 10 and 32, Polyzios and Rollins failed to teach, wherein said means for mirroring data comprises a first mirror engine associated with the first server and a second mirror engine associated with the second server. Anderson teaches, wherein said means for mirroring data comprises a first mirror engine associated with the first server and a second mirror engine associated with the second server (col. 9, lines 14-28 and Fig. 10B). It would have been obvious to one having ordinary skill in the art at the time the invention was made to have means for mirroring data comprises a first mirror engine associated with the first server and a second mirror engine associated with the second server and to combine Polyzois and Rollins' mirroring data with Anderson's means for mirroring data comprises a first mirror engine associated

with the first server and a second mirror engine associated with the second server because such a combination would allow Polyzios and Rollins' systems to have a primary engine and a secondary engine for mirroring data with both engines being synchronized.

As per claim 11, this dependent claim is rejected for the similar rationale as given above for claims 2, 3, and 10.

As per claim 16, this dependent claim is rejected for the similar rationale as given above for claims 1, 7, and 14..

As per claim 19, this dependent claim is rejected for the similar rationale as given above for claims 4 and 14.

As per claim 20, this independent claim is rejected for the similar rationale given to claims 1-7 and 9-19.

Claim Rejections - 35 USC § 103

9. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

10. Claims 23-27 are rejected under 35 U.S.C. 103(a) as being unpatentable over (US 5,432,922) Polyzois et al, hereafter Polyzois and (WO 95/00906) Rollins et al, hereafter Rollins and (US 6,047,356) Anderson et al, hereafter Anderson and in view of (US 5,276,867) Kenley et al, hereafter Kenley.

As per claim 23, Polyzois, Rollins, and Anderson failed to teach, A virtual storage area network as recited in claim 20, further comprising a third server that is capable of receiving write requests and read requests from network clients, the third server having: a third mass storage device; and a third mirror engine, wherein the third mirror engine is capable of mirroring, to the first mass storage device and the second mass storage device, data that is to be written to the third mass storage device. Kenley teaches, A virtual storage area network as recited in claim 20, further comprising a third server that is capable of receiving write requests and read requests from network clients, the third server having: a third mass storage device; and a third mirror engine, wherein the third mirror engine is capable of mirroring, to the first mass storage device and the second mass storage device, data that is to be written to the third mass storage device (col. 2, lines 44-55, col. 4, lines 61-66, and col. 6, lines 40-56). It would have been obvious to one having ordinary skill in the art at the time the invention was made to have a third server that is capable of receiving write requests and read requests from network clients, the third server having: a third mass storage device; and a third mirror engine, wherein the third mirror engine is capable of mirroring, to the first mass storage device and the second mass storage device, data that is to be written to the third mass storage device and to combine Polyzois with Kenley's third server that is capable of receiving write requests and read requests from network clients, the third server having: a third mass storage device; and a third mirror engine, wherein the third mirror engine is capable of mirroring, to the first mass storage device and the second mass storage device, data that is to be written to the third mass storage device because such a

combination would allow Polyzios' and Kenley's systems to have a third server as a backing store (hierarchical storage server that has a higher capacity and lower speed than the secondary storage and can include erasable optical, write-once-read-many (WORM disks, or tape volumes.

As per claim 24, Polyzios, Rollins, and Anderson failed to teach, A virtual storage area network as recited in claim 23, further comprising means for communicating between the third server and the first server and also between the third server and the second server. Kenley teaches, A virtual storage area network as recited in claim 23, further comprising means for communicating between the third server and the first server and also between the third server and the second server (col. 7, lines 51-62). It would have been obvious to one having ordinary skill in the art at the time the invention was made to have means for communicating between the third server and the first server and also between the third server and the second server and to combine Polyzios with Kenley's communicating between the third server and the first server and also between the third server and the second server because such a combination would allow Polyzios' and Kenley's systems to have the backing storage (third server) to have control fro the backup system by using a baseline backup and an incremental backup.

As per claim 25, Polyzios failed to teach, A virtual storage area network as recited in claim 20, wherein the first server and the second server execute a policing protocol to determine whether a server, upon receiving a write request, has write access priority for writing data to the first mass storage device and the second mass storage device. Anderson teaches, A virtual storage area network as recited in claim 20,

wherein the first server and the second server execute a policing protocol to determine whether a server, upon receiving a write request, has write access priority for writing data to the first mass storage device and the second mass storage device (col. 6, lines 45-65). It would have been obvious to one having ordinary skill in the art at the time the invention was made to have the first server and the second server execute a policing protocol to determine whether a server, upon receiving a write request, has write access priority for writing data to the first mass storage device and the second mass storage device and to combine Rollins' data mirroring with Polyzios first server and the second server execute a policing protocol to determine whether a server, upon receiving a write request, has write access priority for writing data to the first mass storage device and the second mass storage device because such a combination would allow Polyzios' and Anderson's systems to have a high speed connection and to have the primary and backup processing systems on separate computers.

As per claim 26, this dependent claim is rejected for the similar rationale as given above for claims 23-25.

As per claim 27, this dependent claim is rejected for the similar rationale as given above for claims 23-26.


Inquiries

11. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Ella Colbert whose telephone number is 571-272-6741. The examiner can normally be reached on Monday, Tuesday, and Thursday, 5:30AM-3:00PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, James Trammell can be reached on 571-272-6712. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

September 4, 2006


ELLA COLBERT
PRIMARY EXAMINER